AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A bipolar interconnection plate for placement between fuel cell units in a fuel cell stack having multiple fuel cell units to form a power generation system, each fuel cell unit including an anode member, a cathode member, and a portion of electrolyte material positioned between the anode member and the cathode member, the bipolar interconnection plate comprising:

(a) a generally planar support member having opposing first side and second side surfaces;

(b) an elongate channel and lands adjacent thereto defined on the first side surface of the support member;

(c) an elongate channel and lands adjacent thereto defined on the second side surface of the support member; and

(d) a heat pipe disposed in the planar support member for receiving and distributing heat in the fuel cell stack, the heat pipe including:

(i) a sealed body containing a working fluid;

(ii) at least one evaporator section disposed in the sealed body; and

(iii) at least one condenser section, wherein the heat pipe is configured to transport heat by evaporating working fluid in the evaporator section, and directing the working fluid from the evaporator section to the condenser section where the working fluid is condensed.

2. (Original) A bipolar interconnection plate as recited in claim 1, wherein the heat pipe is substantially embedded in one of the lands defined on either the first side surface or the second side surface.

3. (Original) A bipolar interconnection plate as recited in claim 1, wherein a first heat pipe is embedded within one of the lands on the first side surface and a second heat pipe is embedded within one of the lands on the second side surface.

4. (Original) A bipolar interconnection plate as recited in claim 1, further comprising a plurality of elongate channels defining a longitudinal array of lands adjacent thereto on the first side surface and a plurality of elongate channels defining a longitudinal array of lands adjacent thereto on the second side surface.

5. (Original) A bipolar interconnection plate as recited in claim 4, further comprising a heat pipe embedded in each of the longitudinal lands defined by the plurality of elongate channels on the first side surface and a heat pipe embedded in each of the longitudinal lands defined by the plurality of elongate channels on the second side surface.

6. (Original) A bipolar interconnection plate as recited in claim 5, wherein the plurality of elongate channels and array of longitudinal lands with embedded heat pipes on the first side of the support member and the plurality of elongate channels and array of longitudinal lands with embedded heat pipes on the second side of the support member are in a perpendicular relationship with respect to each other.

7. (Original) A bipolar interconnection plate as recited in claim 6, wherein the heat pipes extend substantially the length of the support member.

8. (Original) A bipolar interconnection plate as recited in claim 1, wherein the elongate channel is substantially U-shaped.

9. (Original) A bipolar interconnection plate as recited in claim 1, wherein the heat pipe contains a working fluid that comprises liquid metal.

10. (Previously Presented) A fuel cell stack including multiple fuel cell units forming a power generation system, wherein each fuel cell unit includes an anode member, a cathode member, and a portion of electrolyte material positioned between the anode member and the cathode member, and a bipolar interconnection plate for placement between at least one pair of adjacent fuel cell units in the fuel cell stack, the bipolar interconnection plate comprising:

(a) a generally planar support member having opposing first side and second side surfaces;

(b) a plurality of elongate channels and lands defined adjacently thereto on the first side surface of the support member;

(c) a plurality of elongate channels and lands defined adjacently thereto on the second side surface of the support member; and

(d) a first heat pipe disposed within at least one of the lands of the first side of the support member and a second heat pipe disposed within at least one of the lands of the second

side of the support member for receiving and distributing heat within the fuel cell stack, wherein each heat pipe includes:

(i) a sealed body containing a working fluid;

(ii) at least one evaporator section disposed in the sealed body; and

(iii) at least one condenser section, wherein the heat pipe is configured to transport heat by evaporating working fluid in the evaporator section, and directing the working fluid from the evaporator section to the condenser section where the working fluid is condensed.

11. (Original) A fuel cell stack as recited in claim 10, wherein the lands and channels on the first side surface are defined substantially perpendicular with respect to the lands and channels on the second side surface.

12. (Original) A fuel cell stack as recited in claim 11, further comprising a heat pipe disposed within each of the lands of the first side of the support member and a heat pipe disposed within each of the lands of the second side of the support member.

13. (Original) A fuel cell stack as recited in claim 10, wherein the heat pipe is substantially embedded in the support member.

14. (Original) A fuel cell stack as recited in claim 10, wherein the bipolar interconnection plate is placed between each fuel cell unit.

15-18. (Canceled)

19. (Previously Presented) A bipolar interconnection plate as recited in claim 1, wherein the heat pipe further includes a transport section disposed between the at least one evaporator section and the at least one condenser section for transporting the working fluid between the evaporator section and the condenser section.

20. (Previously Presented) A bipolar interconnection plate as recited in claim 19, wherein the transport section includes a wick structure capable of transporting and distributing liquid by capillary action from the condenser section to the evaporator section.

21. (Canceled)

22. (Canceled)

23. (Previously Presented) A fuel cell stack as recited in claim 10, wherein at least one of the heat pipes further includes a transport section disposed between the at least one evaporator section and the at least one condenser section for transporting the working fluid between the evaporator section and the condenser section.

24. (Previously Presented) A fuel cell stack as recited in claim 23, wherein the transport section transports and distributes liquid from the condenser section to the evaporator section by a mechanism chosen from the group consisting of capillary action and gravity.

25. (New) A fuel cell stack comprising:

a) a plurality of fuel cells; and

b) a bipolar plate disposed between two adjacent fuel cells, the bipolar plate including a heat pipe disposed therein, the heat pipe being configured to passively distribute heat within the bipolar plate.

26. (New) The fuel cell of clam 25, wherein the heat pipe includes:

(a) a sealed body containing a working fluid;

(b) at least one evaporator section disposed in the sealed body; and

(c) at least one condenser section, wherein the heat pipe is configured to transport heat by evaporating working fluid in the evaporator section, and directing the working fluid from the evaporator section to the condenser section where the working fluid is condensed.